

# SERVICE MANUAL

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STEREO RADIO  
CASSETTE RECORDER

BASIC TAPE MECHANISM : TN-9R-215

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This Service Manual is the "Revision Publishing" and replaces "Simple Manual"

CS-P77 AU(S) : (S/M Code No. 09-996-404-6T1)

CS-P77 AHRJ(S),AHKJ(S),AEZ(S), AK(S) : (S/M Code No. 09-996-404-6T2).

# SPECIFICATIONS

## AU MODEL

### Tuner section

Frequency range, antenna — FM: 87.5 - 108.0 MHz  
Rod antenna, AM: 530/531 - 1,710/1,602 kHz (10/9 kHz step) Ferrite bar antenna

### Deck section

Track format — 4 tracks, 2 channels / Frequency range — Normal tape: 50 - 8,000 Hz (EIAJ) / Recording system — AC bias / Erasing system — Magnet erase / Heads — Recording/playback head (1), Erasure head (1)

### General

Speaker — 58 mm cone type (2) / Output — Headphones jack (stereo mini-jack) / Power output — 0.5 W + 0.5 W (EIAJ 4 ohms, T.H.D. 10%) / Power requirements — DC 6 V using four size AA (R6P) batteries, Domestic AC power using the supplied AC adaptor / Dimensions — 280 (W) × 106 (H) × 61 (D) mm (11 1/8 × 4 1/4 × 2 1/2 in.) / Weight — 650 g (1 lb. 7 oz.) (excluding batteries)

### <AC adaptor AC-D602 AU>

Rated input — AC 120 V, 60 Hz / Rated output — DC 6 V, 500 mA

- Design and specifications are subject to change without notice.

## AK, AEZ MODELS

### Tuner section

Frequency range, antenna — FM: 87.5 - 108.0 MHz  
Rod antenna, AM: 522/530 - 1,611/1,600 kHz (9/10 kHz step) Ferrite bar antenna

### Deck section

Track format — 4 tracks, 2 channels / Frequency range — Normal tape: 50 - 8,000 Hz (EIAJ) / Recording system — AC bias / Erasing system — Magnet erase / Heads — Recording/playback head (1), Erasure head (1)

### General

Speaker — 58 mm cone type (2) / Output — Headphones jack (stereo mini-jack) / Power output — 0.7 W + 0.7 W (DIN MUSIC POWER), 0.5 W + 0.5 W (EIAJ 4 ohms, T.H.D. 10%), 0.3 W + 0.3 W (DIN 1% Rated Power) / Power requirements — DC 6 V using four size AA (R6P) batteries, Domestic AC power using the supplied AC adaptor / Dimensions — 280 (W) × 106 (H) × 61 (D) mm / Weight — 650 g (excluding batteries)

### <AC adaptor AC-D602 AK, AEZ>

Rated input — AC 230 V, 50 Hz / Rated output — DC 6 V, 500 mA

- Design and specifications are subject to change without notice.

## AHR, AHK MODELS

### Tuner section

Frequency range, antenna — FM: 87.5 - 108.0 MHz  
Rod antenna, AM: 522/530 - 1,611/1,600 kHz (9/10 kHz step) Ferrite bar antenna

### Deck section

Track format — 4 tracks, 2 channels / Frequency range — Normal tape: 50 - 8,000 Hz (EIAJ) / Recording system — AC bias / Erasing system — Magnet erase / Heads — Recording/playback head (1), Erasure head (1)

### General

Speaker — 58 mm cone type (2) / Output — Headphones jack (stereo mini-jack) / Power output — 0.5 W + 0.5 W (EIAJ 4 ohms, T.H.D. 10%), 0.3 W + 0.3 W (DIN 1% Rated Power) / Power requirements — DC 6 V using four size AA (R6P) batteries, Domestic AC power using the supplied AC adaptor / Dimensions — 280 (W) × 106 (H) × 61 (D) mm / Weight — 650 g (excluding batteries)

### AC adaptor

#### <AC-D602 AHK>

Rated input — AC 230V, 50 Hz  
Rated output — DC 6 V, 500 mA

#### <AC-D602 AHR>

Rated input — AC 110 - 120 V/ 220 - 240V, 50/60 Hz  
Rated output — DC 6 V, 500 mA

- Design and specifications are subject to change without notice.

## ACCESSORIES/PACKAGE LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。  
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
	1 8Z-CS7-908-010	IB, EZ, K (9L) <K, EZ>	
	1 8Z-CS7-907-010	IB, H (ECA) <HRJ, HKJ>	
	1 8Z-CS7-905-010	IB, U (ESF) <U>	
⚠	2 87-B30-164-010	AC ADAPTOR, AC-D602E <EZ>	
⚠	2 87-B30-166-010	AC ADAPTOR, AC-D602H <HRJ>	
⚠	2 87-B30-165-010	AC ADAPTOR, AC-D602K <K, HKJ>	
⚠	2 87-B30-163-010	AC ADAPTOR, AC-D602U <U>	

# ELECTRICAL MAIN PARTS LIST

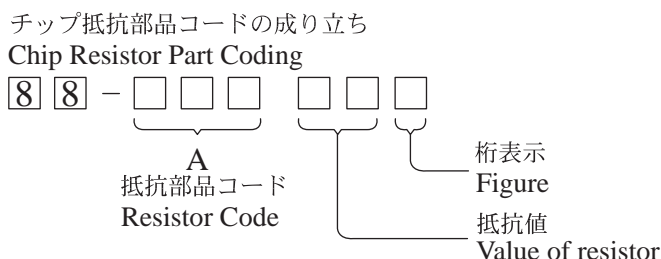
DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。  
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION	REF. NO	PART NO.	KANRI NO.	DESCRIPTION
IC				C60	87-010-236-080		CAP,E 1000-10 SME
	88-CS7-612-010	IC,TA7417AP		C61	87-018-209-080		CAP, CER 0.1-50V
	87-A20-946-040	C-IC,MM1434XF		C62	87-A10-576-080		CAP,CER 0.01-50 Z YF
	86-YW2-618-010	IC,KA2209		C63	87-010-382-080		CAP, ELECT 22-25V
	88-CS7-613-010	IC,KA2402		C64	87-010-221-080		CAP, ELECT 470-10V
	87-001-145-080	IC,TA8126F		C65	87-018-209-080		CAP, CER 0.1-50V
	87-A20-993-040	C-IC,PST9121NL		C66	87-010-248-080		CAP, ELECT 220-10V
	88-CS7-611-010	IC,LC587204A-1L45		C67	87-A10-173-010		CAP,CER 560P-50 K B
	87-A20-955-010	IC,LA1828		C68	87-A10-173-010		CAP,CER 560P-50 K B
	87-A20-889-040	C-IC,LC72133V-TLM		C200	87-018-209-080		CAP, CER 0.1-50V
TRANSISTOR				C201	87-018-209-080		CAP, CER 0.1-50V
	87-CD7-604-080	TR,8550C		C202	87-A10-172-010		CAP,CER 470P-50 K B
	87-CD7-603-080	TR,SS8050		C209	87-A10-176-010		CAP,CER 1000P-50 M D
	87-A30-064-010	TR,2SC982TM		C210	87-018-209-080		CAP, CER 0.1-50V
	89-324-584-080	TR,2SC2458 (0.2W)		C211	87-A10-176-010		CAP,CER 1000P-50 M D
	87-026-447-080	TR,2SC1740S R		C213	87-018-209-080		CAP, CER 0.1-50V
	87-026-572-080	TR,DTA114TS		C214	87-A10-176-010		CAP,CER 1000P-50 M D
	89-113-625-080	TR,2SA1362GR(120MHZ,0.		C216	87-010-545-080		CAP, ELECT 0.22-50V
	89-319-233-080	TR,2SC1923 (0.1W)		C217	87-010-400-080		CAP, ELECT 0.47-50V
	87-A30-092-080	FET,2SK439E/F		C218	87-010-403-080		CAP, ELECT 3.3-50V
DIODE				C219	87-010-401-080		CAP, ELECT 1-50V
	87-A40-659-080	ZENER,HZ5BLL		C220	87-010-401-080		CAP, ELECT 1-50V
	87-A40-398-010	DIODE,1N4001		C221	87-A10-576-080		CAP,CER 0.01-50 Z YF
	87-070-345-080	DIODE,1N4148		C222	87-A10-576-080		CAP,CER 0.01-50 Z YF
	87-020-465-080	DIODE,1SS133 (110MA)		C223	87-A10-576-080		CAP,CER 0.01-50 Z YF
MAIN C.B				C224	87-A10-176-010		CAP,CER 1000P-50 M D
C1	87-A10-283-080	CAP,M 1000P-50 J		C225	87-A10-176-010		CAP,CER 1000P-50 M D
C2	87-A10-283-080	CAP,M 1000P-50 J		C226	87-010-265-080		CAP, ELECT 33-16V
C7	87-010-380-080	CAP, ELECT 47-16V		C227	87-A10-576-080		CAP,CER 0.01-50 Z YF
C8	87-010-380-080	CAP, ELECT 47-16V		C227	87-A10-576-080		CAP,CER 0.01-50 Z YF
C11	87-010-248-080	CAP, ELECT 220-10V		C230	87-A10-176-010		CAP,CER 1000P-50 M D
C16	87-010-248-080	CAP, ELECT 220-10V		C234	87-018-208-080		CAP 0.047-50F
C17	87-010-382-080	CAP, ELECT 22-25V		C235	87-010-405-080		CAP, ELECT 10-50V
C18	87-010-263-080	CAP, ELECT 100-10V		C236	87-A10-576-080		CAP,CER 0.01-50 Z YF
C19	87-010-404-080	CAP, ELECT 4.7-50V		C237	87-010-380-080		CAP, ELECT 47-16V
C20	87-010-404-080	CAP, ELECT 4.7-50V		C239	87-010-380-080		CAP, ELECT 47-16V
C21	87-010-380-080	CAP, ELECT 47-16V		C242	87-A10-176-010		CAP,CER 1000P-50 M D
C22	87-010-404-080	CAP, ELECT 4.7-50V		C243	87-A10-176-010		CAP,CER 1000P-50 M D
C23	87-018-209-080	CAP, CER 0.1-50V		C245	87-018-209-080		CAP, CER 0.1-50V
C25	87-010-263-080	CAP, ELECT 100-10V		C246	88-CS7-648-010		CAP,STY 390P 005-039100-000
C26	87-010-380-080	CAP, ELECT 47-16V		C247	87-A10-166-010		CAP,CER 150P-50 K B
C27	87-A10-576-080	CAP,CER 0.01-50 Z YF		C249	87-010-403-080		CAP, ELECT 3.3-50V
C28	87-A10-576-080	CAP,CER 0.01-50 Z YF		C253	87-018-209-080		CAP, CER 0.1-50V
C29	87-010-248-080	CAP, ELECT 220-10V		C254	87-A10-576-080		CAP,CER 0.01-50 Z YF
C30	87-010-263-080	CAP, ELECT 100-10V		C255	87-A10-576-080		CAP,CER 0.01-50 Z YF
C35	87-010-404-080	CAP, ELECT 4.7-50V		C271	87-018-209-080		CAP, CER 0.1-50V
C36	87-010-404-080	CAP, ELECT 4.7-50V		C295	87-018-209-080		CAP, CER 0.1-50V
C37	87-010-380-080	CAP, ELECT 47-16V		C301	87-010-405-080		CAP, ELECT 10-50V
C38	87-010-402-080	CAP, ELECT 2.2-50V		CF201	87-A91-162-010		FLTR,PFS450A7
C39	87-010-401-080	CAP, ELECT 1-50V		CF202	88-CS8-631-010		FLTR,CERAMIC SFE10.7MS2-A
C40	87-010-401-080	CAP, ELECT 1-50V		D203	87-017-568-080		VARI-CAP,SVC 342 M/L
C41	87-010-401-080	CAP, ELECT 1-50V		D205	87-A40-226-080		VARI-CAP,SVC251SPA
C42	87-010-401-080	CAP, ELECT 1-50V		D206	87-A40-226-080		VARI-CAP,SVC251SPA
C43	87-A10-176-010	CAP,CER 1000P-50 M D		HP1	87-A60-420-010		JACK,3.5 ST (MSC)
C44	87-A10-176-010	CAP,CER 1000P-50 M D		J1	88-CS7-618-010		JACK,DC 6
C45	87-010-263-080	CAP, ELECT 100-10V		L101	87-003-102-080		COIL, 10UH
C46	87-010-263-080	CAP, ELECT 100-10V		L201	88-CS8-630-010		COIL,FM 9T,3MM,DIA:0.4MM CS34-
C47	87-018-209-080	CAP, CER 0.1-50V		L202	88-CS8-629-010		COIL,FM 4T,4.5MM,DIA:0.3 MM
C48	87-018-209-080	CAP, CER 0.1-50V		L203	88-CS7-647-010		COIL,FM3.5T,3.5MM,DIA:0.5 C805
C51	87-010-263-080	CAP, ELECT 100-10V		L204	88-CS7-647-010		COIL,FM3.5T,3.5MM,DIA:0.5 C805
C52	87-010-248-080	CAP, ELECT 220-10V		L205	88-CS7-649-010		COIL,BAR ANT/031 192618-000
C53	87-010-380-080	CAP, ELECT 47-16V		L206	87-005-151-080		COIL,2.2UH
C54	87-018-209-080	CAP, CER 0.1-50V		L207	87-005-151-080		COIL,2.2UH
C55	87-018-209-080	CAP, CER 0.1-50V		L208	87-003-102-080		COIL, 10UH
				SW2	88-CS8-621-010		SW,PUSH 2P2T PS22E06A(Q-SOUND)
				SW3	88-CS7-654-010		SW,PUSH 1-1-2 PS12E03
				T1	88-CS8-628-010		COIL,OSC IFT 4A-363R(B) 10MM
				T101	88-CS7-641-010		COIL,IFT 5M7A279R 5MM
				T201	88-CS7-642-010		COIL,IFT S7M7B165N 7MM BLACK
				T202	88-CS7-645-010		COIL,IFT 5M7A1527N 7MM ORANGE

REF. NO	PART NO.	KANRI NO.	DESCRIPTION	REF. NO	PART NO.	KANRI NO.	DESCRIPTION
T203	88-CS7-643-010		COIL,IFT 5M4A1273R 7MM YELLOW	C115	87-010-196-080		CHIP CAPACITOR,0.1-25
T204	88-CS7-644-010		COIL,IFT 5M1A1492N 7MM RED	C116	87-010-151-080		C-CAP,S 7P-50 CH
TC201	87-011-221-080		CAP, TRIMMER 30P	C117	87-010-196-080		CHIP CAPACITOR,0.1-25
VR1	88-CS7-640-010		VR,RTRY 50KDX2 H RK14K121/20MM	C118	88-CS7-622-010		CAP,CER 0.047F-5 SUPER CAP
VR2	88-CS7-639-010		SFR,2K H S085 /002- 202085-000	LCD101	88-CS7-615-010		LCD,HLC8853-01140
X201	87-030-372-010		VIB,XTAL 7.2MHZ	X101	87-030-273-010		VIB,XTAL 32.768K5PPM
				X102	87-A70-155-010		VIB,CER 1000KHZ 0.2%
DISPLAY C.B				POWER SW C.B			
C101	87-010-180-080		C-CER 1500P	D2	88-CS8-644-010		LED,SE-3001DT,3MM BRIGHT ,REDL
C102	87-012-145-080		CAP, CHIP S 270P CH	SW1	88-CS7-655-010		SW,SL 2-4-3 SS43D03G7
C103	87-015-677-080		CAP,E 100-6.3 7L				
C104	87-015-677-080		CAP,E 100-6.3 7L				
C104	87-015-677-080		CAP,E 100-6.3 7L				
C105	87-010-178-080		CHIP CAP 1000P				
C106	87-010-314-080		C-CAP,S 22P-50V				
C107	87-010-196-080		CHIP CAPACITOR,0.1-25				
C108	87-010-196-080		CHIP CAPACITOR,0.1-25				
C109	87-010-320-080		CHIP CAP 68P				
C110	87-010-316-080		C-CAP,S 33P-50 CH				
C111	87-010-316-080		C-CAP,S 33P-50 CH				
C112	87-010-196-080		CHIP CAPACITOR,0.1-25				
C113	87-010-316-080		C-CAP,S 33P-50 CH				
C114	87-010-196-080		CHIP CAPACITOR,0.1-25				

- Regarding connectors, they are not stocked as they are not the initial order items.  
The connectors are available after they are supplied from connector manufacturers upon the order is received.

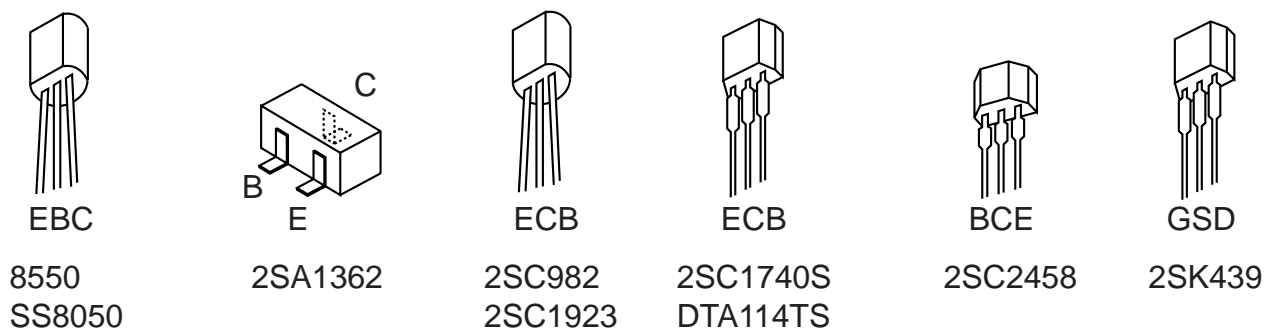
#### チップ抵抗部品コード／CHIP RESISTOR PART CODE



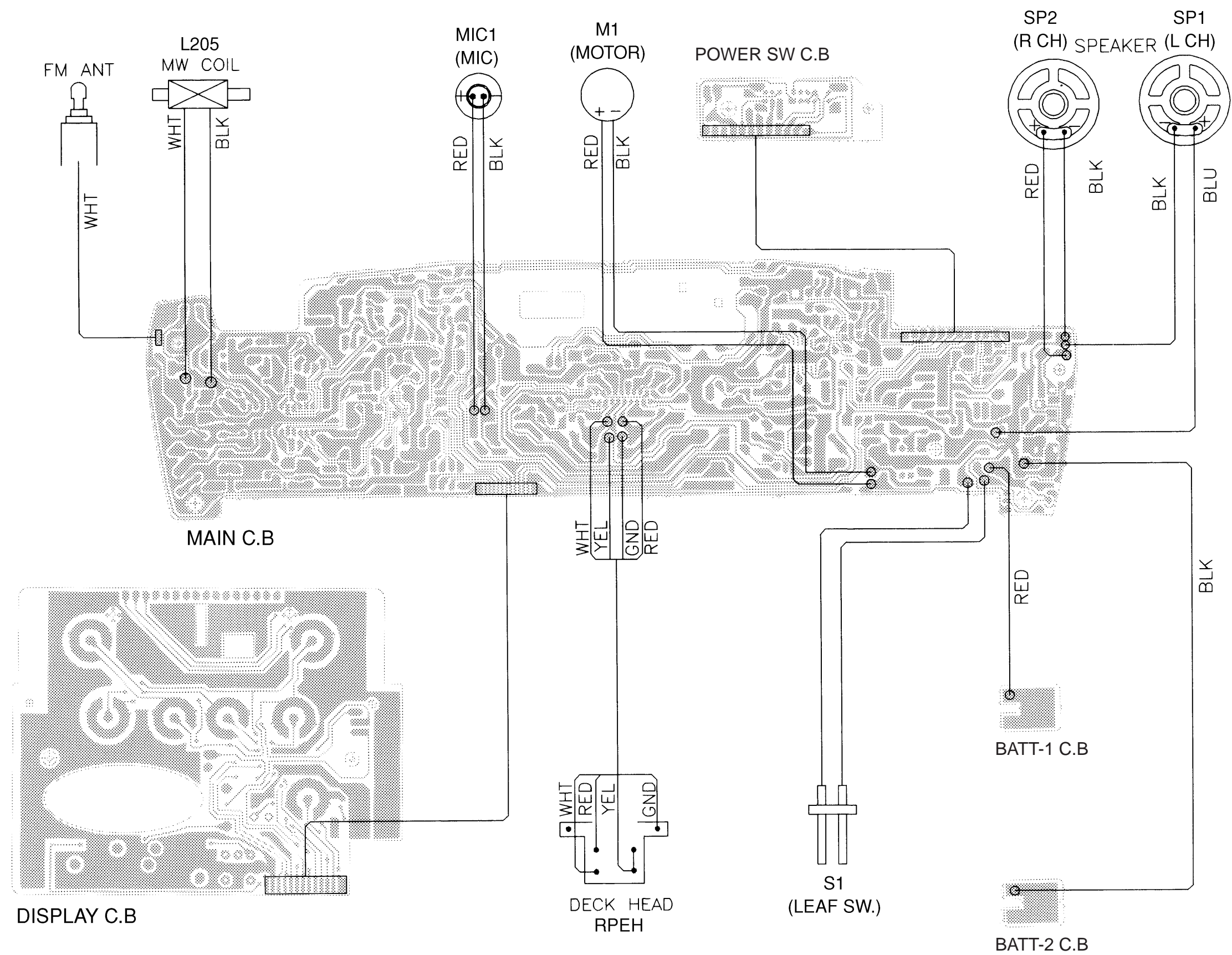
#### チップ抵抗 Chip resistor

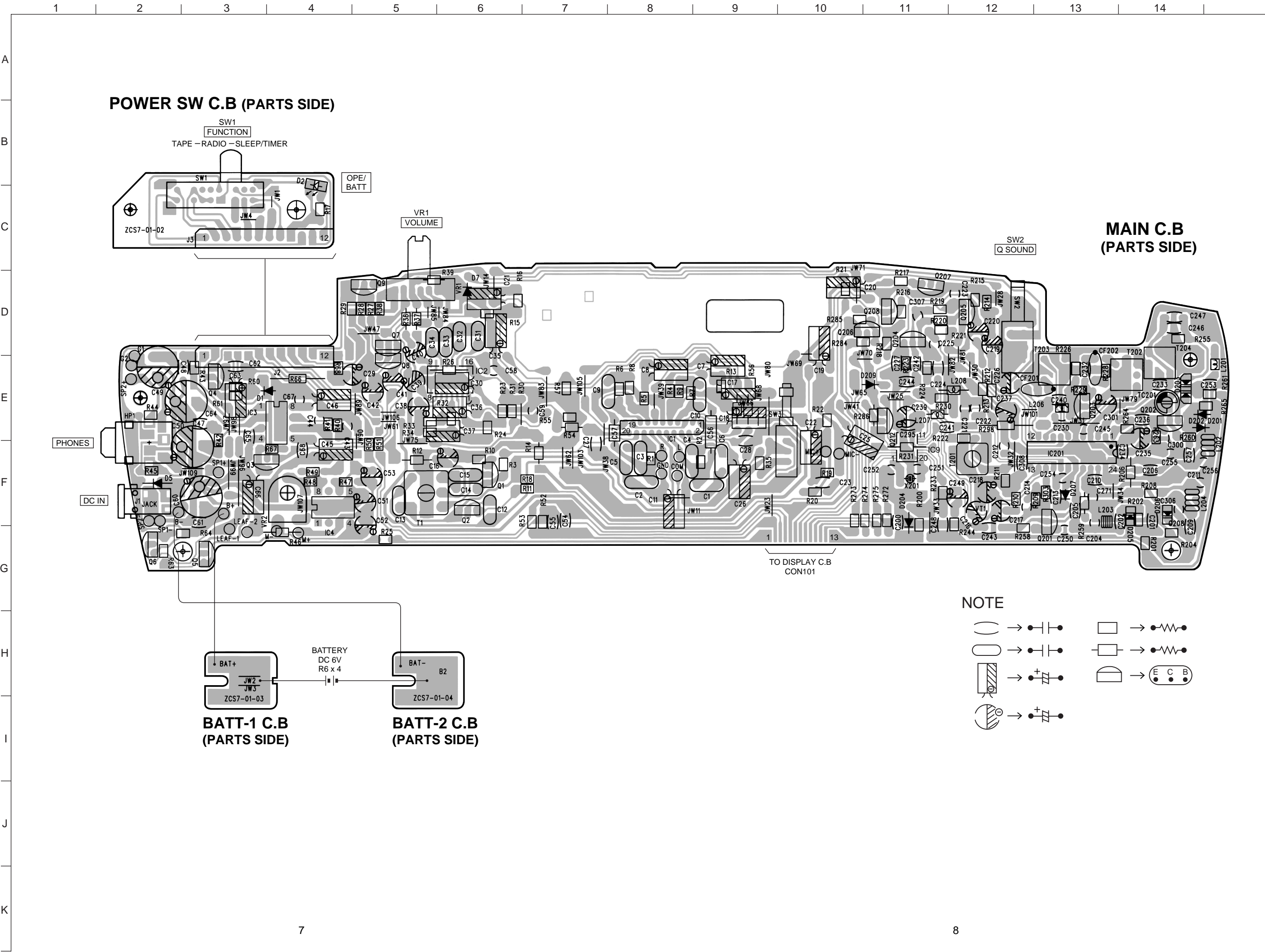
容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm)				抵抗コード : A Resistor Code : A
				外形／Form	L	W	t	
1/16W	1005	± 5%	CJ		1.0	0.5	0.35	104
1/16W	1608	± 5%	CJ		1.6	0.8	0.45	108
1/10W	2125	± 5%	CJ		2	1.25	0.45	118
1/8W	3216	± 5%	CJ		3.2	1.6	0.55	128

## TRANSISTOR ILLUSTRATION

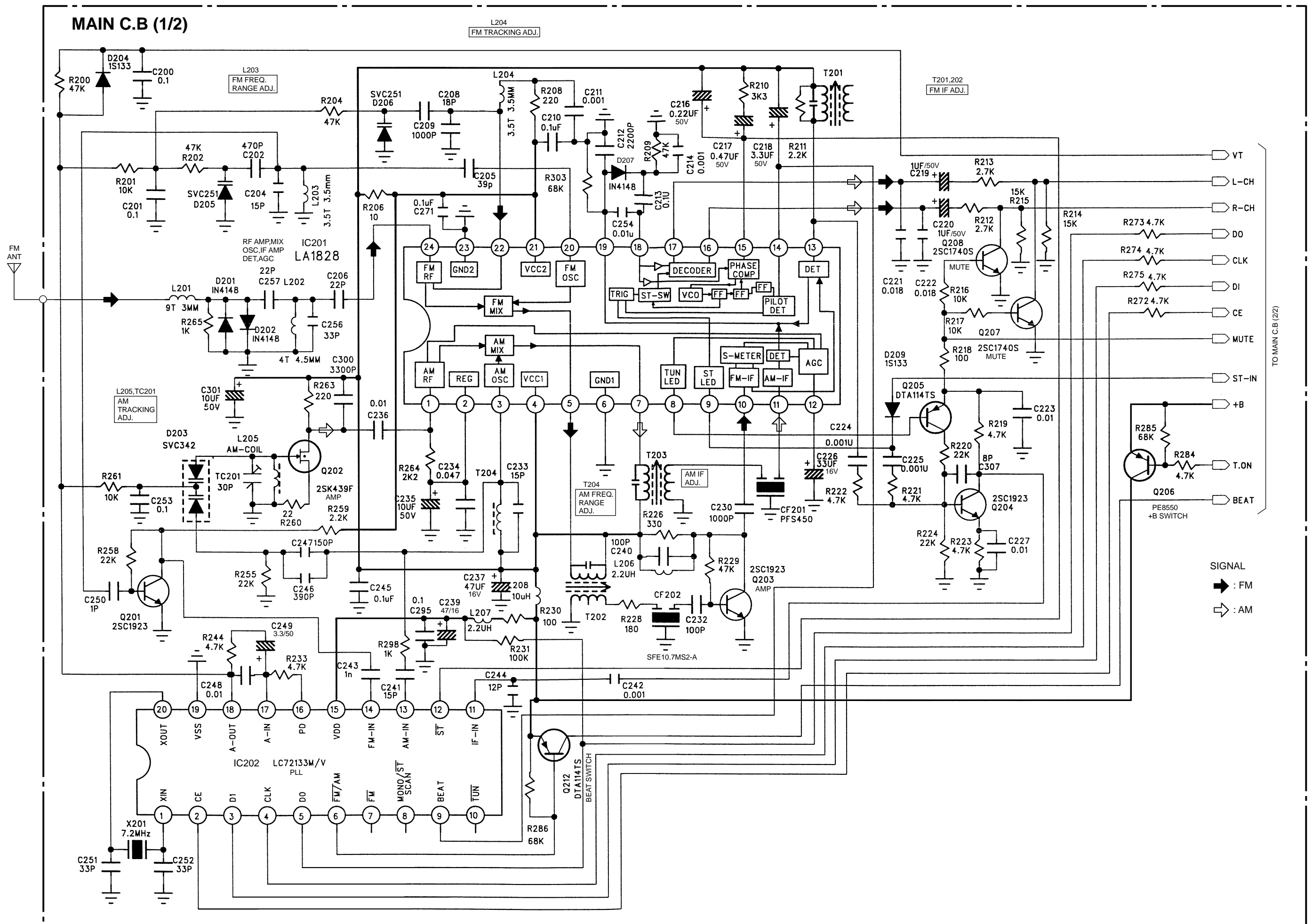


WIRING DIAGRAM















VOLTAGE CHART

TUNER SECTION

TEST CONDITION:SET TUNER ON AM/FM ONE FREQUENCY  
THE MEASURED VALUE IS DC VOLTAGE

UNIT:V

IC201 (LA1828)

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10	11	12
FM ST	1.28	1.28	3.17	3.17	3.19	0	3.17	0	0	1.28	1.28	1.95
AM	1.27	1.27	3.24	3.24	3.24	0	3.24	0	2.62	1.27	1.27	1.1
PIN'S NUMBER	13	14	15	16	17	18	19	20	21	22	23	24
FM ST	3.18	2.47	2.46	1.23	1.24	1.25	1.43	3.08	3.11	3.02	0	0.83
AM	3.24	1.93	0.04	1.24	1.25	1.25	0.38	3.22	3.22	3.22	0	0

IC202 (LC72133M)

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10
FM ST	1.51	0	2.82	0	3.00	3.21	/	/	2.48	1.96
AM	1.58	0	2.83	0	3.17	3.24	/	/	1.93	1.75
PIN'S NUMBER	11	12	13	14	15	16	17	18	19	20
FM ST	1.47	2.47	0	1.52	3.07	0.79	0.79	2.40	0	1.54
AM	1.52	0	1.58	0	3.21	0.76	0.76	4.45	0	1.61

TRANSISTOR	Q201(2SC1923)			Q203(2SC1923)			Q204(2SC1923)			Q205(DTA114)		
	E	C	B	E	C	B	E	C	B	E	C	B
FM ST	0	1.00	0.72	0	3.19	0.76	0	0	0	0	0	0

TRANSISTOR	Q206(8550)			Q212(DTA114)		
	E	C	B	E	C	B
FM ST	3.29	3.23	2.58	3.23	2.09	3.21

TRANSISTOR	Q202(2SC1923)		
	G	S	D
AM	0	0.15	1.73

CASSETTE & POWER AMP. SECTION

TEST CONDITION: TAPE PLAY OR RADIO ON

IC1 (TA7417AP)

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10	11
PLAY	4.92	3.31	2.07	2.05	2.08	0	2.09	2.08	2.08	2.08	0
REC.	4.07	0	2.08	2.00	2.09	1.25	2.10	2.02	2.09	2.09	0
PIN'S NUMBER	12	13	14	15	16	17	18	19	20	21	
PLAY	2.08	0.08	2.08	2.08	2.08	2.09	0	2.08	2.07	2.07	
REC.	2.09	0.93	2.09	2.08	2.08	2.09	2.10	2.08	2.07	2.07	

IC101 (TA8126F)

PIN'S NUMBER	1	2	3	4	5
FM ST	7.22	14.71	7.66	7.66	0.10
PIN'S NUMBER	6	7	8	9	10
FM ST	0	0.62	3.17	3.17	0

IC3 (KA2209)

PIN'S NUMBER	1	2	3	4	5	6	7	8
TAPE PLAY	3.00	6.49	3.00	0	0.55	0	0	0.56

IC2 (MM1434XF)

PIN'S NUMBER	1	2	3	4	5	6	7	8
Q SOUND ON	2.95	2.95	1.96	1.67	2.88	2.95	2.94	0
Q SOUND OFF	2.95	2.95	0	1.67	2.88	2.95	2.94	0
PIN'S NUMBER	9	10	11	12	13	14	15	16
Q SOUND ON	2.97	0.10	3.71	3.74	3.69	3.65	2.88	5.96
Q SOUND OFF	2.97	0.10	3.71	3.78	3.76	3.77	3.00	5.96

IC4 (KA2402)

PIN'S NUMBER	1	2	3	4	5	6	7	8
TAPE PLAY	0	0	5.85	4.01	0	5.08	0	4.97

IC201 (LA1828)

PIN'S NUMBER	1	2	3	4	5	6	7	8	9	10	11	12
FM ST	2.80	2.74	2.78	0	0	3.02	3.82	0	0	2.82	0	0.88
AM	2.82	2.00	2.80	0	0	3.16	2.85	0	0	2.85	1.56	1.17
PIN'S NUMBER	13	14	15	16	17	18	19	20	21	22	23	24
FM ST	1.42	1.42	0	2.83	2.06	2.82	0.43	0	2.87	0	0	0
AM	1.43	1.43	0	2.85	2.07	2.84	2.83	0	2.88	0	0	0
PIN'S NUMBER	25	26	27	28	29	30	31	32	33	34	35	36
FM ST	0	0	2.83	2.76	2.84	2.84	2.74	0	2.83	0	/	/
AM	0	0	2.85	2.85	2.85	2.85	0	2.24	2.85	0	/	/
PIN'S NUMBER	37	38	39	40	41	42	43	44	45	46	47	48
FM ST	/	/	/	/	/	/	/	/	/	/	/	/
AM	/	/	/	/	/	/	/	/	/	/	/	/
PIN'S NUMBER	49	50	51	52	53	54	55	56	57	58	59	60
FM ST	/	/	/	/	/	/	/	/	/	/	/	1.41
AM	/	/	/	/	/	/	/	/	/	/	/	1.42
PIN'S NUMBER	61	62	63	64								
FM ST	1.41	1.42	0.70	2.09								
AM	1.43	1.43	0.70	2.11								

IC102 (PST9121)

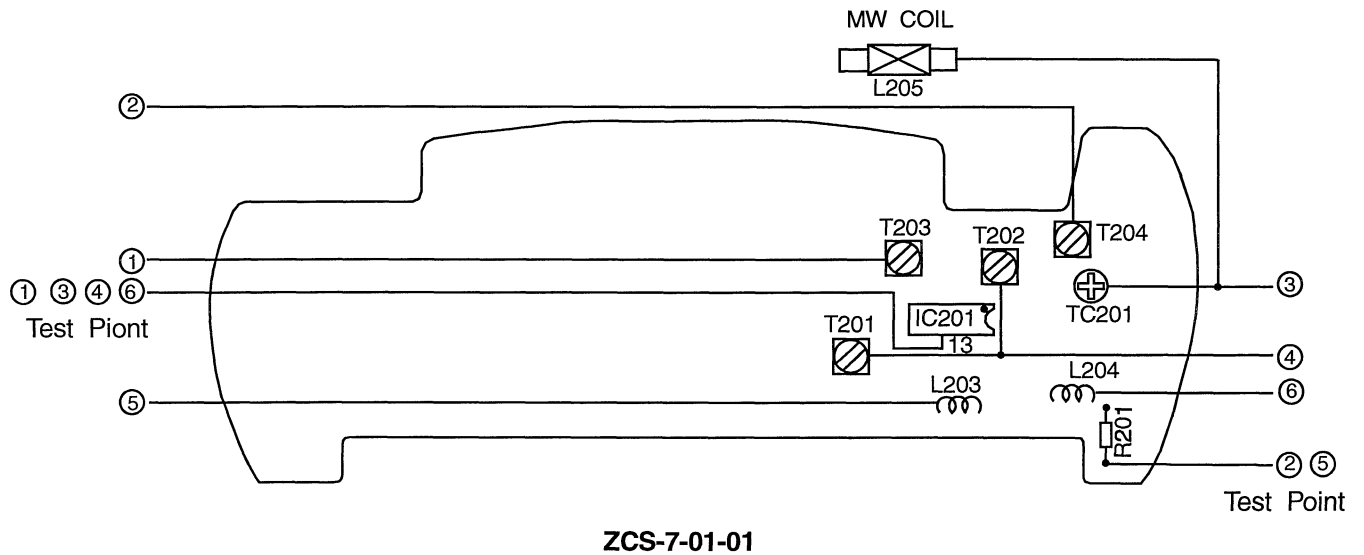
PIN'S NUMBER	1	2	3
FM ST	2.83	0	2.82

TRANSISTOR	Q1(8050)			Q2(8050)		
	E	C	B	E	C	B
TAPE PLAY	0	5.96	0.07	2.08	2.73	1.46
TAPE REC	0	3.09	0.72	2.09	15.29	2.08

TRANSISTOR	Q3(8050)			Q4(2SC982)			Q5(C2458)			Q6(8550)		
	E	C	B	E	C	B	E	C	B	E	C	B
TAPE PLAY	5.91	6.55	6.51	3.45	6.68	4.58	0	6.62	0	6.63	6.70	6.65
RADIO	5.91	6.55	6.51	3.45	6.68	4.58	0	1.32	0.70	6.81	6.83	6.10

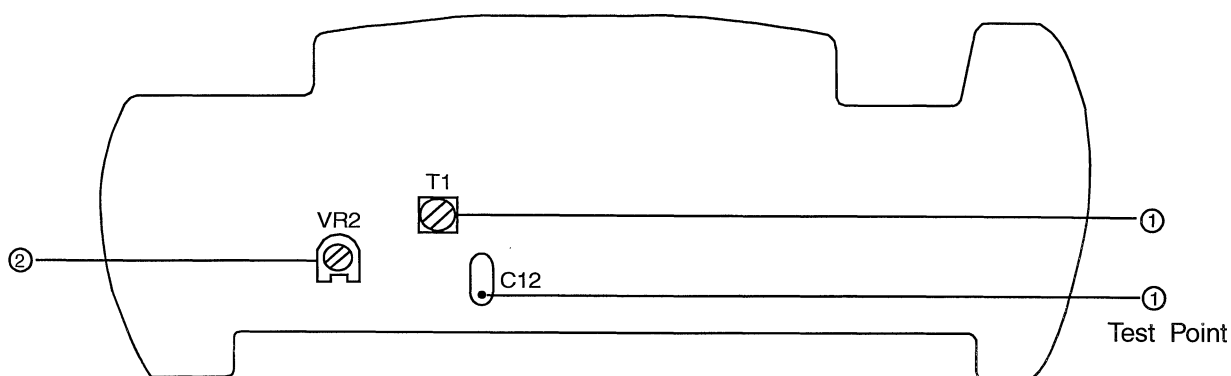
TRANSISTOR	Q101(A1362)			Q102(DTA114)		
	E	C	B	E	C	B
FM ST	3.30	3.21	2.62	3.30	0	2.82

## ELECTRICAL ADJUSTMENT



### TUNER SECTION

1. AM IF Adjustment  
 Test point: IC201(LA1828) 13PIN  
 Adjustment location: T203  
 T203-----450kHz
2. AM Frequency Range Adjustment  
 Test point: intersection of R201 and R200  
 Adjustment location: T204  
 Set the frequency to be 530kHz (AU version)  
 or 522 kHz(AEZ version) then test voltage.  
 Adjust T204 so that the test point voltage  
 is  $0.82V \pm 0.03V$ .
3. AM Tracking Adjustment  
 Test point: IC201(LA 1828)13 PIN  
 Adjustment Location: L205 (MW COIL), TC201  
 L205----- 600kHz(AU version) Waveform max.  
 603kHz(AEZ, AK, AHR version)  
 TC201-----1400kHz(AU version) Waveform max.  
 1404kHz(AEZ, AK, AHR version)
4. FM IF Adjustment  
 Test point: IC201(LA1828) 13 PIN  
 Adjustment Location: T202  
 T202,T201-----10.7MHz
5. FM Frequency Range Adjustment  
 Test point: intersection of R201 and R200  
 Adjustment Location : L203  
 Set the frequency to be 87.5MHz then  
 test voltage.  
 Adjust L203 so that the test point voltage  
 is  $1.50V \pm 0.03V$ .
6. FM Tracking Adjustment  
 Test point : IC201(LA1828) 13PIN  
 Adjustment Location: L204  
 L 204-----88MHz Waveform max.



ZCS-7-01-01

## CASSETTE SECTION

### 1. Bias Frequency Adjustment

Test point: intersection of C12 and C13

Adjustment location: T1

T1-----60kHz±5kHz

### 2. Tape Speed Adjustment

Test point: headphone jack

Adjustment Location: VR2

VR2-----3000+90/-60Hz

## PRACTICAL SERVICE FIGURE

### (TUNER SECTION)

#### <FM SECTION>

Sensitivity:	Less than 22dB
(T.H.D 3%)	(at 88, 98, 108MHz)
Signal noise ratio:	More than 45dB
Distortion:	Less than 3.0%
If frequency:	10.7MHz
Stereo separation:	More than 20dB

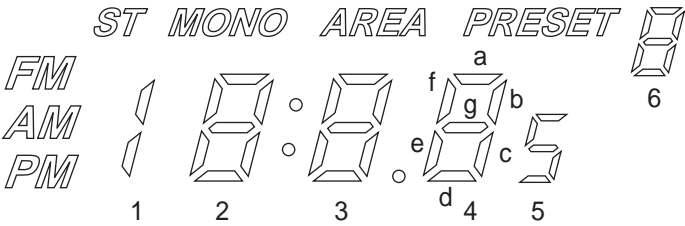
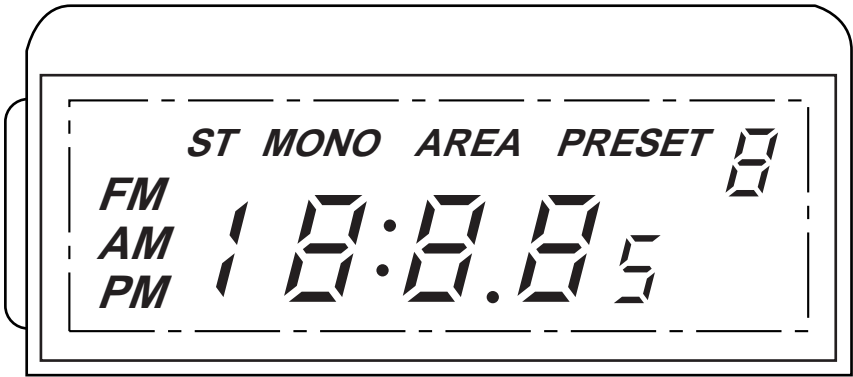
#### <AM SECTION>

Sensitivity:	AU MODEL
(at S/N 10dB)	Less than 50dB (at 600kHz)
	Less than 47dB
	(at 1000, 1400kHz)
	EXCEPT AU
	Less than 50dB (at 603kHz)
	Less than 47dB
	(at 999, 1404kHz)
Signal noise ratio:	More than 30dB
(5mV/m)	(at 1000kHz)
Distortion:	Less than 3% (at 1000kHz)
If frequency:	455kHz

### (TAPE SECTION)

Tape speed:	2940-3090Hz
Wow & flutter:	Less than 0.45%
Erasing ratio:	More than 30dB
Distortion:	Less than 3% (PB)
	Less than 8% (REC/PB)
Signal to noise ratio:	More than 45dB (PB)

LCD DISPLAY



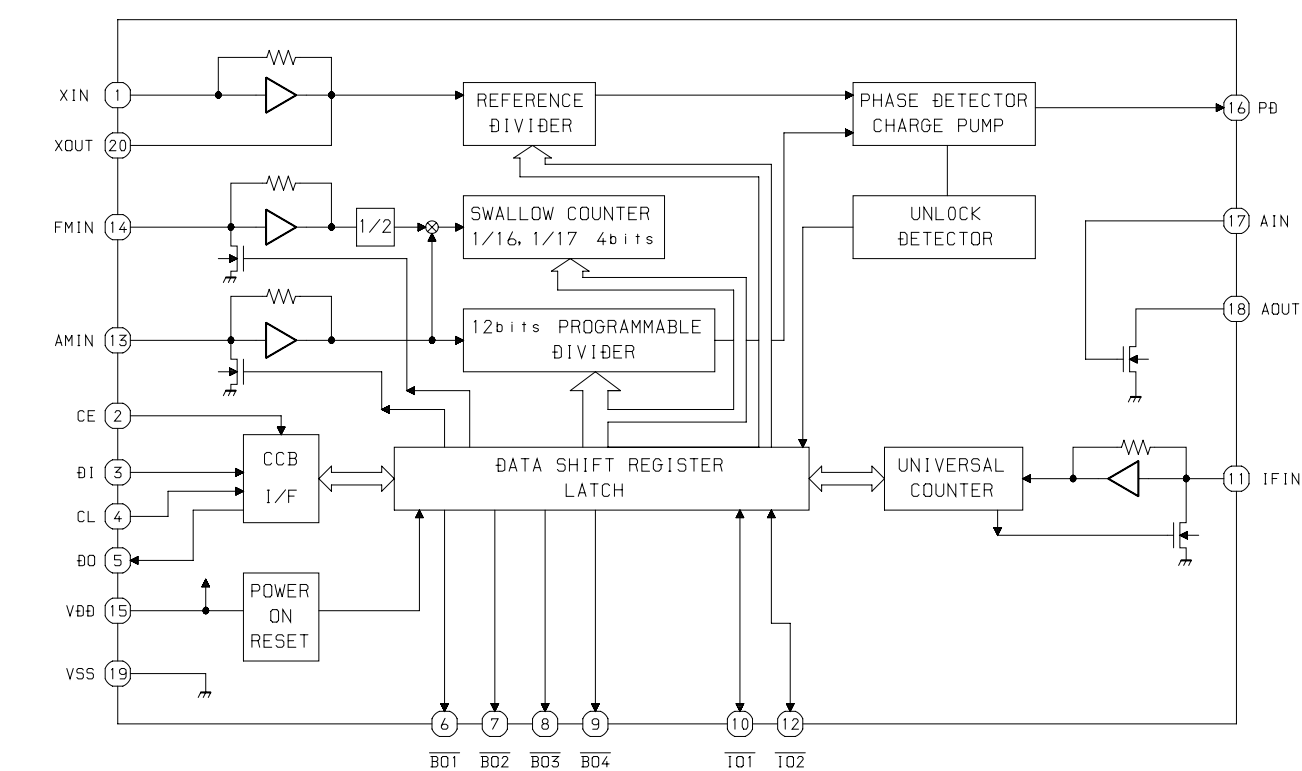


# IC DESCRIPTION

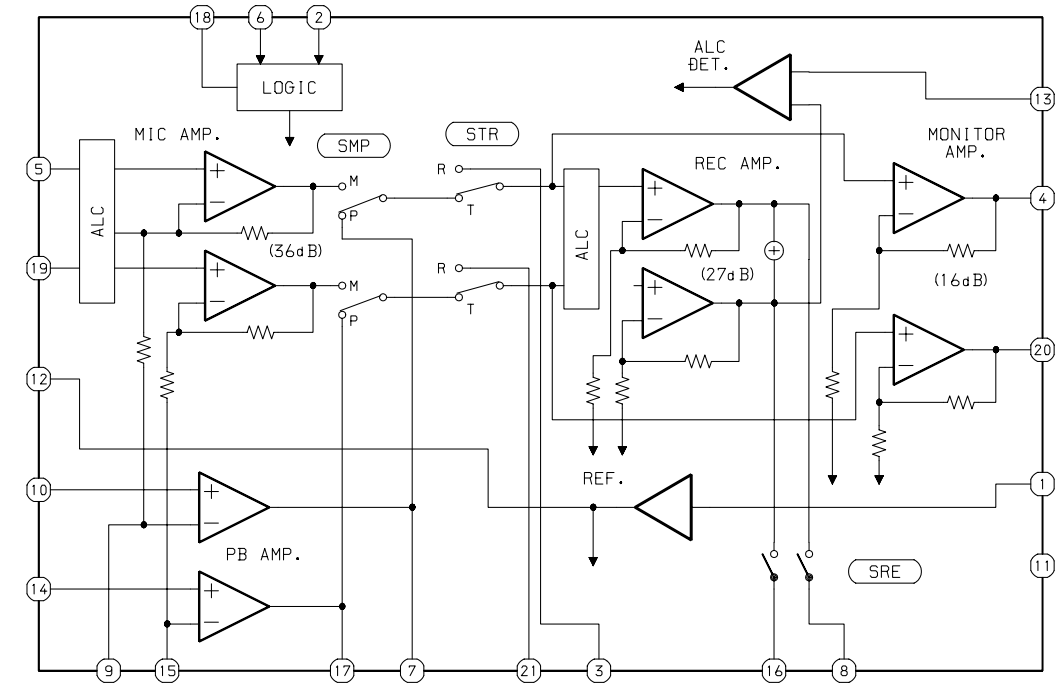
## IC, LC587204

Pin No.	Pin Name	I/O	Description
1	RES	I	Active low (normally pulled up), microprocessor reset.
2	INT	I	Not connected.
3, 4	S01, S02	I/O	Destination is set.
5	S03	I/O	Not connected.
6-9	S04, P1-P3	I/O	PLL serial data.
10	P4	I/O	—
11	XTout	O	Xtal 32 kHz.
12	XTin	I	
13, 14	VDD2, VDD1	—	—
15	VSS	—	GND.
16	VDD	—	+B, microprocessor power supply.
17	CFin	I	Ceramic 1 MHz.
18	CFout	O	
19	S1	I	—
20	S2	I	HOLD terminal High during HOLD.
21	S3	I	Tuner input detection by function switch.
22	S4	I	Timer input detection.
23	K1	I/O	—
24, 25	K2, K3	I/O	KEY matrix (input).
26	K4	I/O	—
27-30	M1-M4	I/O	KEY matrix (output).
31	N1	O	Clock shift.
32	N2	O	Power control (output).
33	N3	O	Mute output.
34	N4	O	ON when tuner is selected.
35	TST	I	GND.
36-48	SEG01-SEG13	O	LCD segment output.
49-58	SEG14-SEG23	O	—
59	COM4	O	—
60-62	COM3-COM1	O	LCD common output.
63, 64	CUP1, CUP2	—	—

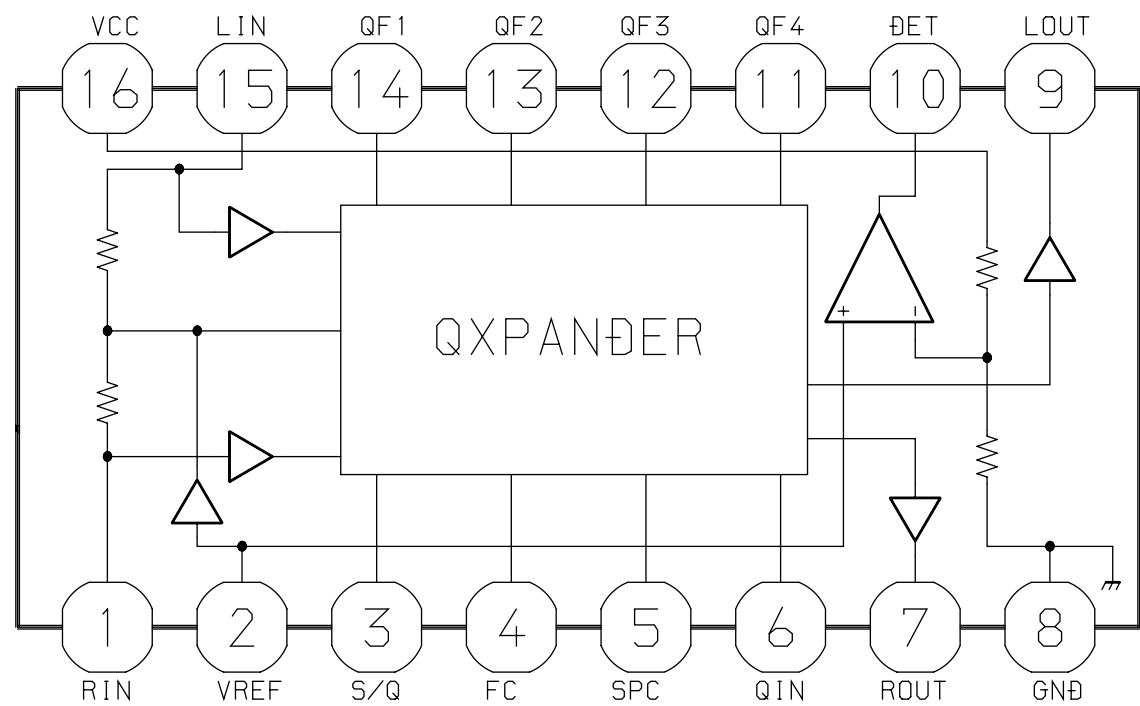
IC BLOCK DIAGRAM  
IC, LC72133

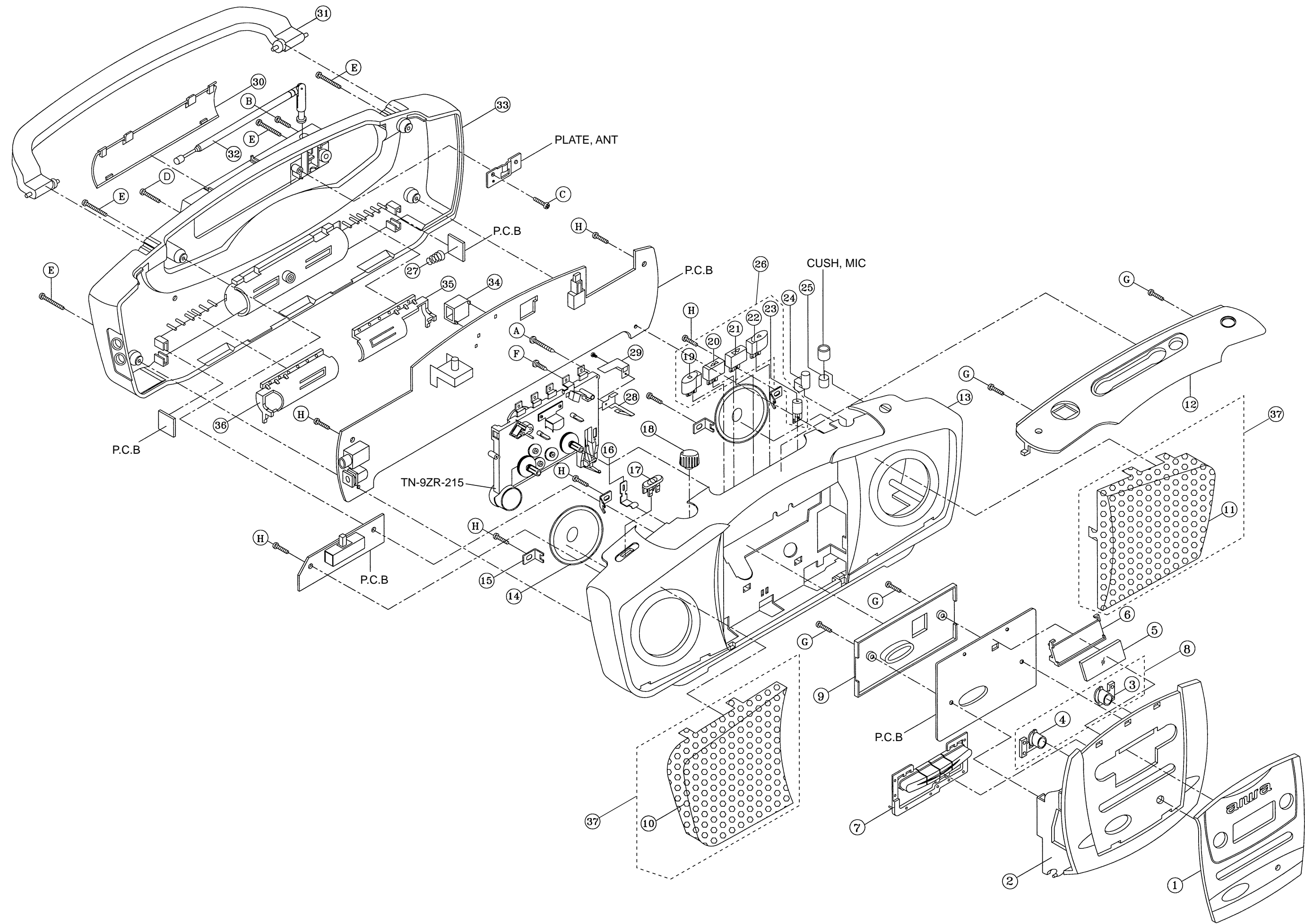


IC, TA7417AP



IC, MM1434





## MECHANICAL PARTS LIST 1/1

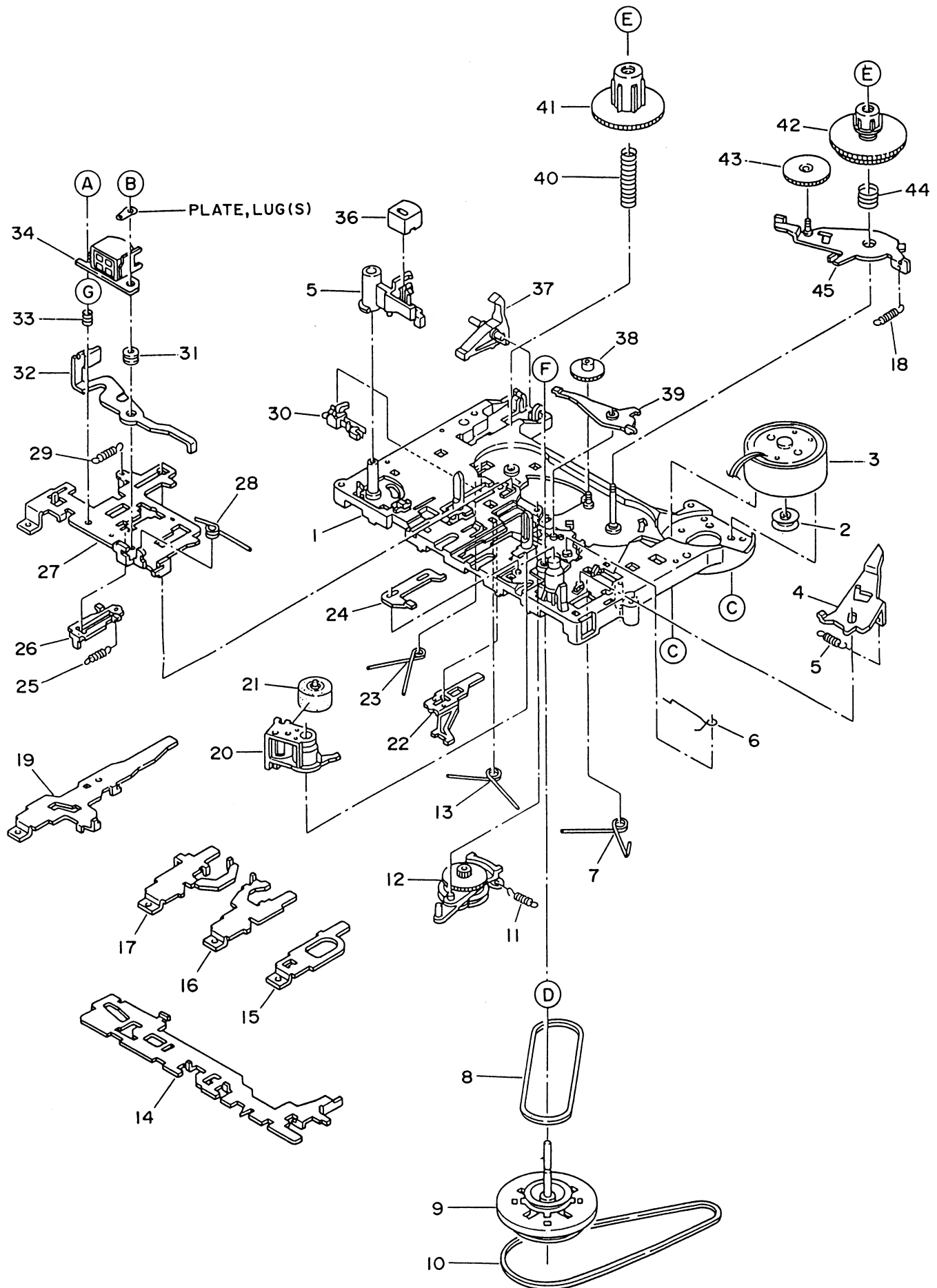
DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。  
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION	REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	8Z-CS7-021-010		WINDOW,CASS EX	26	SZ-CS7-CAS-K00		CASS KNOB SET<U>
2	8Z-CS7-004-010		LID,CASS	27	88-CS7-211-010		SPR,BATT A(-)
3	8Z-CS7-019-010		BTN,BAND	28	88-CS7-215-010		SPR-P,REC
4	8Z-CS7-018-010		BTN,PRESET	29	86-CS9-207-010		SPR-P,CASS
5	88-CS7-615-010		LCD,HLC8853-01140	30	8Z-CS7-027-010		LID,BATT
6	8Z-CS7-201-010		HLDR,DISPLAY	31	8Z-CS7-014-010		HANDL,
7	8Z-CS7-015-010		BTN,TUNING	32	88-CS7-626-010		ANT,ROD P7 TYPE
8	SZ-CS7-189-KY0		PRESET/BAND KNOB SET<U>	33	8Z-CS7-002-010		CABI,REAR
9	8Z-CS7-202-010		COVER, PCB	34	88-CS8-214-010		HLDR,BAR ANT
10	8Z-CS7-016-010		GRILLE,SPKR(L)<EXCEPT U>	35	88-CS7-204-010		COVER, BATT(R)
11	8Z-CS7-017-010		GRILLE,SPKR(R)<EXCEPT U>	36	88-CS7-203-010		COVER, BATT(L)
12	8Z-CS7-023-010		PANEL,TOP EX	37	SZ-CS7-SPK-GL0		SPEAKER GRILL L&R<U>
13	8Z-CS7-022-010		CABI,FRONT EX	A	87-B10-114-010		VT2+2-12 CR
14	88-CS7-625-010		SPKR,55MM 40HM	B	87-254-094-410		U+3-6 CR
15	88-CS8-213-010		HLDR,SPEAKR	C	87-741-073-410		UT2+2.6-6 GLD
16	88-CS7-209-010		SPR-P,DOOR CASS	D	87-741-096-410		UT2+3-10
17	8Z-CS7-012-010		KNOB,SL FUNCTION	E	87-741-097-410		UT2+3-12
18	8Z-CS7-013-010		KNOB,RTRY VOLUME	F	87-741-033-410		UT2+2-4 GLD W/O SLOT
19	8Z-CS7-007-010		KEY,CASS STOP	G	87-741-074-410		UT2+2.6-8
20	8Z-CS7-008-010		KEY,CASS FFWD	H	87-741-095-410		UT2+3-8 GLD
21	8Z-CS7-009-010		KEY,CASS REW				
22	8Z-CS7-010-010		KEY,CASS PLAY				
23	8Z-CS7-011-010		KEY,CASS REC				
24	8Z-CS7-006-010		KEY,Q-SOUND				
25	88-CS8-625-010		MIC,ECM				

## COLOR NAME TABLE

Basic color symbol	Color	Basic color symbol	Color	Basic color symbol	Color
B	Black	C	Cream	D	Orange
G	Green	H	Gray	L	Blue
LT	Transparent Blue	N	Gold	P	Pink
R	Red	S	Silver	ST	Titan Silver
T	Brown	V	Violet	W	White
WT	Transparent White	Y	Yellow	YT	Transparent Yellow
LM	Metallic Blue	LL	Light Blue	GT	Transparent Green
LD	Dark Blue	DT	Transparent Orange		

# TAPE MECHANISM EXPLODED VIEW 1/1





## TAPE MECHANISM PARTS LIST 1/1

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。  
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION	REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	S1-877-013-120		CHASSIS ASSY	31	S1-867-020-040		RPH COLLAR
2	S1-877-120-010		MOTOR PULLEY	32	S1-877-033-010		SENSING PLATE ASSY
3	S6-002-070-100		MOTOR FR-410CA-12250T	33	S9-400-312-000		SPR,HEAD
4	S1-877-010-170		AUTO LEVER	34	S6-201-011-170		HEAD,RP-7442FS-1251
5	S1-877-010-190		AUTO LEVER SPR	35	S1-877-030-050		ARM MG
6	S1-877-030-090		SPR,EARTH	36	S6-207-100-020		HEAD E TC-230AN(SL)
7	S1-877-010-370		SPR,LEVER BTN STOP	37	S1-877-020-010		LEVER,SAFETY REC
8	S1-867-050-040		BELT,RF	38	S1-821-100-700		GEAR,FF
9	S1-877-093-050		FLYWHEEL ASSY	39	S1-877-190-010		ARM RC
10	S1-877-090-070		BELT,MAIN	40	S1-877-060-020		BACK TENSION SPR
11	S1-877-070-060		SPR,ARM PULLEY RF	41	S1-877-060-010		S REEL
12	S1-877-073-030		RF PULLEY ARM ASSY	42	S1-877-053-040		TAKE UP REEL ASSY
13	S1-877-010-110		FR BUTTON LEVER SPR	43	S1-821-103-4A0		GEAR T ROLLER
14	S1-877-010-260		BTN,ACTUATOR	44	S1-821-100-460		BACK TENSION SPR
15	S1-877-010-060		STOP BUTTON LEVER	45	S1-877-015-030		T ROLLER GEAR PLATE ASSY
16	S1-877-010-230		LEVER,BTN FF	A	S9-817-000-000		SCREW AZIMUTH M2-4.3
17	S1-877-010-240		LEVER,BTN RWD	B	S9-210-000-000		SCREW M2-5
18	S1-877-010-320		SPR,PLATE T GEAR	C	S9-C33-172-030		CAMERA(SPECIAL) SCREW M2-1.7
19	S1-877-010-250		LEVER,BTN REC	D	S9-999-000-010		P.WASHER 1.85-3.2-0.2
20	S1-877-040-010		PINCH ROLLER ARM	E	S9-888-000-000		P.WASHER CUT 1.2-3-0.4
21	S1-877-040-070		PINCH ROLLER ASSY	F	S9-999-030-010		P.WASHER CUT 1.5-3.2-0.5
22	S1-877-010-270		PLATE,SW	G	S9-316-000-000		FH WASHER 2.1-5-0.2
23	S1-877-010-310		SPR,ACTUATOR				
24	S1-877-190-020		PLATE TIMING				
25	S1-877-030-080		SPR,RC				
26	S1-877-030-040		P,PLATE				
27	S1-877-030-030		PANEL,HEAD				
28	S1-877-040-080		PINCH ROLLER ARM SPR				
29	S1-877-030-070		SPR,PANEL HEAD				
30	S6-401-011-490		SW,LEAF MSW-1541T				



サービス技術ニュース	
番号	連絡内容
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**アイワ株式会社** 〒110-8710 東京都台東区池之端1-2-11 ☎03(3827)3111（代表）  
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